REMARKS

Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested.

By this Response, no claims are amended, cancelled or added. Accordingly, after entry of this Amendment, claims 1-43 will remain pending in the patent application.

As a preliminary matter, Applicant respectfully objects to the Office Action's determination that claims 1-31 are the only claims pending in the present patent application. As claims 32-43 have not been cancelled, Applicant submits that claims 1-43 remain pending in the patent application. Further, Applicant notes that the Office Action has not indicated the status of claims 32-43. In particular, it is not clear in the Office Action whether claims 32-43 are allowed or withdrawn from further consideration since the Office Action has not provided any indication that the restriction requirement issued on April 19, 2009, and traversed by Applicant, is final. As such, in the absence of such indication, Applicant believes that claims 32-43 should have been examined. Accordingly, Applicant has identified claims 32-43 with the status identifier "original". In the event the Office decides to withdraw these claims from further consideration or not to allow these claims in the next communication, Applicant respectfully requests that a new non-final Office Action must be issued setting a new period for reply. *See* MPEP §706.07 and 37 C.F.R. §1.113.

Claims 1-8 and 25-31 were rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Bijkerk *et al.* (U.S. Patent No. 6,452,194) (hereinafter "Bijkerk"). Applicant respectfully traverses this rejection.

Claim 1 recites a radiation source comprising "an anode and a cathode that are configured and arranged to create a discharge, within a discharge element, in a substance in a discharge space between said anode and said cathode to form a plasma so as to generate electromagnetic radiation, said radiation source comprising a plurality of discharge elements." The cited portions of Bijkerk do not teach or render obvious these features.

The cited portions of Bijkerk disclose various radiation sources that include a cathode, an anode and a discharge space to produce a radiation emitting plasma. *See* Bijkerk at FIGS. 1-6. The discharge is created in a discharge space using a driver gas, which fills the space between the anode and the cathode. *See* Bijkerk at col. 7, lines 7-10 and 40-43, col. 8, lines 9-14 and 38-42 and col. 10, lines 19-21. A discharge is ignited in the driver gas in order to create a plasma. *See* Bijkerk at col. 7, lines 9-14. After the plasma is produced, a working

substance is provided in the plasma in order to create an EUV radiation. *See* Bijkerk at col. 7, lines 14-20.

With this said, the cited portions of Bijkerk do not remotely disclose, teach or suggest a radiation source that comprises a plurality of discharge elements. According to claim 1, a discharge is created within the discharge element and the radiation source comprises a plurality of such discharge elements. These features are neither taught nor suggested in the cited portions of Bijkerk and the Office Action has failed to consider and identify in Bijkerk these features of claim 1. Unlike claim 1, the discharge of Bijkerk is created in a single discharge space/cavity (which most closely corresponds to a "discharge element" of claim 1, but actually is not) in the sources of FIGS. 1-6. Nowhere do the cited portions of Bijkerk disclose, teach or suggest that the radiation source includes a plurality of discharge elements in each of which a discharge is created. Therefore, for at least this reason, claim 1 is patentable over the cited portions of Bijkerk.

Claims 2-5 are patentable over the cited portions of Bijkerk at least by virtue of their dependency from claim 1 and for the additional features recited therein.

Claim 6 recites a radiation source comprising, *inter alia*, "a triggering device configured to initiate said discharge by irradiating a surface proximate said discharge space with an energetic beam." The cited portions of Bijkerk do not teach or render obvious these features of claim 6.

The Office Action refers to element 150 of FIG. 4 as allegedly disclosing, teaching or suggesting the triggering device of claim 6. Applicant strenuously disagrees. Element 150 in FIG. 4 of Bijkerk merely relates to a trigger electrode that is adapted to apply a voltage pulse to start the discharge. *See* Bijkerk at col. 8, lines 60-64. However, unlike claim 6, element 150 of Bijkerk is unable to irradiate a surface with an energetic beam. As known in the art, an electrode does not create a beam. As noted above, a discharge is triggered in the various radiation sources of Bijkerk with the use of a driver gas and electrodes. Nowhere do the cited portions of Bijkerk disclose, teach or suggest that the discharge is triggered in the radiation sources using an energetic beam. Therefore, for at least this reason, claim 6 is patentable over the cited portions of Bijkerk.

Claims 7-18 are patentable over the cited portions of Bijkerk at least by virtue of their dependency from claim 6 and for the additional features recited therein.

Claim 27 recites a method for operating a radiation source, constructed to have a low inductance, and comprising an anode and a cathode that are configured and arranged to create

a discharge in a substance in a discharge space between said anode and said cathode to form a plasma so as to generate electromagnetic radiation, said method comprising "generating an initial discharge followed by operating said radiation source so as to allow successive discharges to occur due to a substantially self-regulated oscillation within said discharge source." The cited portions of Bijkerk do not teach or render obvious these features of claim 27.

As noted above, the cited portions of Bijkerk merely disclose generating an initial discharge to create a plasma and introducing a working substance in the plasma to create an EUV radiation. However, there is no teaching or suggestion in Bijkerk that the radiation source is operated to allow successive discharges due to substantially self-regulated oscillation within the discharge source. As explained, for example at paragraph 117 of the present application, it is possible to operate the radiation source to produce a self-oscillating regime. These aspects are not taught nor suggested in the cited portions of Bijkerk. Therefore, for at least this reason, claim 27 is patentable over the cited portions of Bijkerk.

Claims 28-31 are patentable over the cited portions of Bijkerk at least by virtue of their dependency from claim 27 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejection of claims 1-8 and 25-31 under 35 U.S.C. §102(e) as being allegedly anticipated by Bijkerk are respectfully requested.

Claims 19-24 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Bijkerk in view of Melnychuk *et al.* (U.S. Patent No. 6,815,700) (hereinafter "Melnychuk"). Applicant respectfully traverses this rejection.

Claims 19-24 are patentable over the cited portions of Bijkerk at least by virtue of their dependency from claim 6 and for the additional features recited therein.

The cited portions of Melnychuk fail to remedy the deficiencies of Bijkerk. The cited portions of Melnychuk merely disclose a high energy photon source. *See* Melnychuk at FIG. 1. A pair of plasma pinch electrodes are located in a vacuum chamber. *Id.* The chamber contains a working gas which includes a noble buffer gas and an active gas chosen to provide a desired spectral line. *See* Melnychuk at col. 3, lines 14-39. A pulse power source provides electrical pulses at voltages high enough to create electrical discharges between the electrodes to produce a high density plasma pinch in the working gas. *Id.* However, the cited portions of Melnychuk do not disclose, teach or suggest a radiation source comprising, *inter alia*, "a triggering device configured to initiate said discharge by irradiating a surface proximate said discharge space with an energetic beam." Rather, it appears that in Bijkerk, the initial

discharge to create the plasma is produced by a megahertz RF generator. *See* Melnychuk at col. 26, lines 37-67.

Thus, any proper combination of the cited portions of Bijkerk and Melnychuk cannot result, in any way, in the invention of claims 19-24.

In addition, Applicant respectfully submits that the Office Action has not provided the required motivation or suggestion to combine the teachings of Bijkerk and Melnychuk.

As stated in the recent United States Supreme Court decision in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007), "Often, it will be necessary for a court to look to interrelated teachings of multiple patents...in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be explicit." *Id.* at slip opinion 14, 82 USPQ2d at 1396, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). Here, the Examiner has only provided conclusory statements, which are insufficient to support a *prima facie* case of obviousness.

In fact, the Examiner has not citeded any objective evidence of a motivation or suggestion to combine and modify Bijkerk and Melnychuk. The Examiner has merely stated that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize and substitute the plasma focus light source of Melnychuk et al. into the radiation source of Bijkerk et al. in order to generate intense electromagnetic radiation from a discharge in a substance creating a plasma in a space between an anode and a cathode." This is not objective evidence of a motivation or suggestion to combine the references.

For example, Bijkerk does not disclose that its arrangement is, in any way, inadequate to "generate intense electromagnetic radiation from a discharge in a substance creating a plasma in a space between an anode and a cathode." Thus, in the absence of impermissible hindsight based on Applicant's own specification, there is no reason as to why one skilled in the art would combine the teachings of Bijkerk and Melnychuk in the manner the Examiner has proposed.

Accordingly, reconsideration and withdrawal of the rejection of claims 19-24 under 35 U.S.C. §103(a) as being allegedly unpatentable over Bijkerk in view of Melnychuk are respectfully requested.

All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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